

Lab 6 - Basic Voice Translations

CCNA Voice Lab 6

Basic Voice Translations

Lab Objective:

The objective of this lab exercise is for you to learn and understand how to implement basic voice translation profiles on Cisco IOS gateways

Topic Description:

Voice translation profiles contain voice translation rules, which allow administrators to manipulate not only the DNIS, but the ANI and redirecting number. Translation profiles can also be used to adjust the numbering type and plan, reject unwanted calls as well as remove specific digits in a number, such as hyphens, for example

Lab Difficulty:

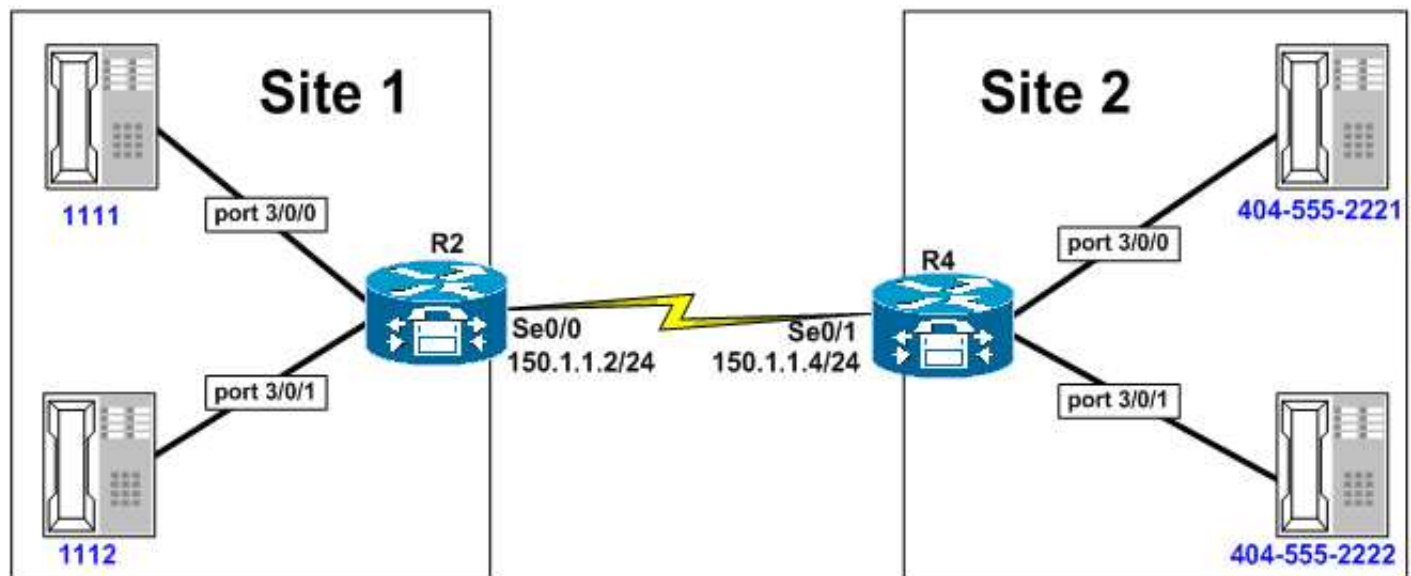
This lab has a difficulty rating of 7/10

Readiness Assessment:

When ready for your exam, you should be able to complete this lab in no more than 10 minutes

Lab Topology:

Please use the following topology to complete this lab exercise:



Lab 6 Configuration Tasks

Task 1:

Configure the hostnames and IP addresses on R2 and R4 as illustrated in the diagram. Configure R4 to provide clocking to R2. Configure the clock rate on R4 as 800Kbps

Task 2:

Configure POTS dial peers on R2 for the extensions specified in the diagram. You are permitted to use any dial peer numbers that you want to use

Task 3:

Configure POTS dial peers on R4 for the extensions specified in the diagram. You are permitted to use any dial peer numbers that you want to use

Task 4:

Configure VoIP dial peers on R2 for the extensions on R4. You are permitted to use any dial peer numbers that you want to use

Task 5:

Configure VoIP dial peers on R4 for the extensions on R2. You are permitted to use any dial peer numbers that you want to use

Task 6:

Configure a translation profile on R2 so that extensions 1111 and 1112 can simply dial 2221 and 2222 to reach the 404-555-2221 and 404-555-2222 extension on R4

Task 7:

Verify your configuration using the appropriate Cisco IOS **show** and **debug** commands

Lab 6 Configuration and Verification

Task 1:

```
R2(config)#hostname R2
R2(config)#interface Serial0/0
R2(config-if)#description .Connected To R4 Serial 0/1.
R2(config-if)#ip address 150.1.1.2 255.255.255.0
```

```
R4(config)#hostname R4
R4(config)#interface Serial0/1
R4(config-if)#description .Connected To R2 Serial 0/0
R4(config-if)#ip address 150.1.1.4 255.255.255.0
R4(config-if)#clock rate 800000
```

Verify connectivity by performing a simple ping between the two routers

```
R2#ping 150.1.1.4
```

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 150.1.1.4, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4 ms
```

```
R4#ping 150.1.1.2
```

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 150.1.1.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/8 ms
```

Task 2:

```
R2(config)#dial-peer voice 1 pots
R2(config-dial-peer)#destination-pattern 1111
R2(config-dial-peer)#port 3/0/0
R2(config-dial-peer)#exit
R2(config)#dial-peer voice 2 pots
R2(config-dial-peer)#destination-pattern 1112
R2(config-dial-peer)#port 3/0/1
R2(config-dial-peer)#exit
```

Task 3:

```
R4(config)#dial-peer voice 1 pots
```

```
R4(config-dial-peer)#destination-pattern 4045552221
R4(config-dial-peer)#port 3/0/0
R4(config-dial-peer)#exit
R4(config)#dial-peer voice 2 pots
R4(config-dial-peer)#destination-pattern 4045552222
R4(config-dial-peer)#port 3/0/1
R4(config-dial-peer)#exit
```

Task 4:

```
R2(config)#dial-peer voice 3 voip
R2(config-dial-peer)#destination-pattern 404555222.
R2(config-dial-peer)#session target ipv4:150.1.1.4
R2(config-dial-peer)#exit
```

Task 5:

```
R4(config)#dial-peer voice 3 voip
R4(config-dial-peer)#destination-pattern 111.
R4(config-dial-peer)#session target ipv4:150.1.1.2
R4(config-dial-peer)#exit
```

Task 6:

This task requires some careful thought and consideration. Based on the requirements, the first task is to configure the translation rule and translation profile and apply the translation profile to the outgoing VoIP dial peer on R2. This is completed as follows:

```
R2(config)#voice translation-rule 1
R2(cfg-translation-rule)#rule 1
R2(cfg-translation-rule)#rule 1 /222./ /404555&/
R2(cfg-translation-rule)#exit
R2(config)#voice translation-profile 4-Digit-Dial-To-R4
R2(cfg-translation-profile)#translate called 1
R2(cfg-translation-profile)#exit
R2(config)#dial-peer voice 3 voip
R2(config-dial-peer)#translation-profile outgoing 4-Digit-Dial-To-R4
```

Based on this configuration, all numbers that begin with 222x are translated such that they begin with 404-555, followed by the last 4 dialed digits.

The second step is to change the destination pattern on the VoIP dial peer. This is because the translation profile appends 404-555 after the call matches an outgoing dial peer, but before it is forwarded to R4. This is completed as follows:

```
R2(config)#dial-peer voice 3 voip
R2(config-dial-peer)#destination-pattern 222.
R2(config-dial-peer)#exit
```

Task 7:

The first validation step is to test the configuration of the translation profile:

```
R2#debug voice translation
VoIP Translation Rule debugging is enabled
R2#
R2#test voice translation-rule 1 2222
Matched with rule 1
Original number: 2222 Translated number: 4045552222
Original number type: none Translated number type: none
Original number plan: none Translated number plan: none
```

```
R2#
*Mar 1 03:57:31.487: //-1/xxxxxxxxxxxx/RXRULE/sed_subst: Successful substitution; pattern=2222
matchPattern=222. replacePattern=404555& replaced pattern=4045552222
```

Next, make a call from R2 to R4 while debugging the voice CCAPI:

R2#**debug voice ccapi inout**

voip ccapi inout debugging is on

R2#

*Mar 1 04:03:04.690: //52/0FE0EE4B8054/CCAPI/cc_api_display_ie_subfields:

ccCallSetupRequest:

cisco-username=

----- ccCallInfo IE subfields -----

cisco-ani=1112

cisco-anitype=0

cisco-aniplan=0

cisco-anipi=0

cisco-anisi=0

dest=4045552221

cisco-desttype=0

cisco-destplan=0

cisco-rdie=FFFFFFFF

cisco-rdn=

cisco-rdntype=0

cisco-rdnplan=0

cisco-rdnpi=0

cisco-rdnsi=0

cisco-redirectreason=0

*Mar 1 04:03:04.694: //52/0FE0EE4B8054/CCAPI/ccIFCallSetupRequestPrivate:

Interface=0x647F1054, Interface Type=1, Destination=, Mode=0x0,

Call Params(Calling Number=1112(TON=Unknown, NPI=Unknown, Screening=Not Screened, Presentation=Allowed),

Called Number=4045552221(TON=Unknown, NPI=Unknown), Calling Translated=FALSE,

-[Truncated Output]-

*Mar 1 04:03:04.694: //53/0FE0EE4B8054/CCAPI/ccIFCallSetupRequestPrivate:

SPI Call Setup Request Is Success; Interface Type=1, FlowMode=1

*Mar 1 04:03:04.694: //53/0FE0EE4B8054/CCAPI/ccCallSetContext:

Context=0x64F54D44

*Mar 1 04:03:04.694: //52/0FE0EE4B8054/CCAPI/ccSaveDialpeerTag:

Outgoing Dial-peer=3

-[Truncated Output]-

Final Relevant Configuration R2:

R2#**show running-config**

Building configuration...

Current configuration : 1746 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname R2

!

!

!

!

voice translation-rule 1

rule 1 /222./ /404555&/

!

!

voice translation-profile 4-Digit-Dial-To-R4

translate called 1

!

!

!

```

!
interface Serial0/0
  description .Connected To R4 Serial 0/1.
  ip address 150.1.1.2 255.255.255.0
  no fair-queue
!
!
!
voice-port 3/0/0
!
voice-port 3/0/1
!
voice-port 3/1/0
!
voice-port 3/1/1
!
!
!
!
dial-peer voice 1 pots
  destination-pattern 1111
  port 3/0/0
!
dial-peer voice 2 pots
  destination-pattern 1112
  port 3/0/1
!
dial-peer voice 3 voip
  translation-profile outgoing 4-Digit-Dial-To-R4
  destination-pattern 222.
  session target ipv4:150.1.1.4

```

Final Relevant Configuration R4:

R4#**show running-config**

Building configuration...

Current configuration : 1525 bytes

```

!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R4
!
!
!
!
interface Serial0/1
  description .Connected To R2 Serial 0/0
  ip address 150.1.1.4 255.255.255.0
  clock rate 800000
!
!
!
!
voice-port 3/0/0
!
voice-port 3/0/1
!
voice-port 3/1/0
!
voice-port 3/1/1
!

```

:
!
!
!
dial-peer voice 1 pots
destination-pattern 4045552221
port 3/0/0
!
dial-peer voice 2 pots
destination-pattern 4045552222
port 3/0/1
!
dial-peer voice 3 voip
destination-pattern 111.
session target ipv4:150.1.1.2



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